

## REMARKS

Claims 2, 6-8, 15, and 22-34 are pending. Claim 2 has been amended. Support for claim 2 is found in the specification at p. 7:8-13, and the examples provided. Claim 15 has been amended to depend from Claim 7. Claim 26 has been amended to correct a typographical error. Claims 27 and 28 have been deleted. New claims 35-39 have been added. Attached hereto is a marked-up version of the changes made to the claims by amendment. The attached page is captioned "Version With Markings To Show Changes Made."

### A. Double Patenting Rejection

Claims 2, 6-8, 15, 22-24, 26-28 and 31-32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, and 7-12 US Patent No. 5,839,224 in view of Sotome and Tsuei (US 5,589,194).

Claims 2, 6-8, 15, 25-28 and 30-32 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-16 of US Patent No. 6,251,951.

Applicants defer responding to the double patenting rejection until there is an indication of otherwise allowable subject matter.

### B. 35 U.S.C. §103 Rejections

#### 1. Sotome (US 4,978,686), Tsuei (US 5,589,194), Yamashita (US 5,696,094), & Frear

Claims 2, 6-8, 15 and 22-32 are rejected under 35 USC §103(a) as being unpatentable over Sotome (US 4,978,686) in view of Tsuei (US 5,589,194), Yamashita (US 5,696,094) and Frear. Applicant respectfully traverses.

When rejecting claims under 35U.S.C. §103, the Examiner bears the burden of establishing a prima facie case of obviousness. See, e.g., *In re Bell*, 26 USPQ2d 1529 (Fed. Cir.

1993); M.P.E.P. §2142. To establish a *prima facie* case, three basic criteria must be met: (1) the prior art must provide one of ordinary skill with a suggestion or motivation to modify or combine the teachings of the references relied upon by the Examiner to arrive at the claimed invention; (2) the prior art must provide one of ordinary skill with a reasonable expectation of success; and (3) the prior art, either alone or in combination, must teach or suggest each and every limitation of the rejected claims. The teaching or suggestion to make the claimed invention, as well as the reasonable expectation of success, must come from the prior art, not Applicant's disclosure. *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991); M.P.E.P. §706.02(j). If any one of these criteria is not met, *prima facie* obviousness is not established.

Sotome discloses methods for protecting crops against attack from insects and microorganisms by applying a composition comprising cinnamic aldehyde and an anti-oxidant. Sotome also teaches that the "stability of [cinnamic aldehyde's] microbe controlling effect is insufficient . . ." Sotome, Col. 1:58-61. Sotome teaches that because cinnamic aldehyde's microbe controlling effect is not stable, the addition of an anti-oxidant is required. Sotome, Col 2:27-32. Accordingly, Sotome teaches away from the claims of the application as it suggests that the use of cinnamic aldehyde without an anti-oxidant will not have sustained microbe inhibiting effects.

Tsuei teaches a process for encapsulating an active component. Tsuei broadly discloses that the active component could be an anti-microbial agent. Tsuei does not suggest the use of aromatic aldehydes to provide a plant with sustained resistance to pathological microorganisms.

Yamashita was filed on May 6, 1996. The present application is a continuation-in-part of USSN 08/366,973, filed December 30, 1994, and whose disclosure is incorporated by reference in the present application. USSN 08/366,973 discloses that formulations containing cinnamic

aldehyde and/or coniferyl aldehyde are effective for controlling nematodes. (p. 26:14-27:11.)

Yamashita is therefore not available as a reference.

Frear discloses that Saponin can be used as spreading or wetting agent in connection with insecticide sprays.

Applicant respectfully submits that Claims 2, 26, 29-34, and 37-39 are not obvious over the combined references. Claims 2 and 26 recite a method for providing a plant with sustained resistance to pathological microorganisms comprising a composition comprising an aromatic aldehyde without an anti-oxidant. Dependent Claim 29 recites that the pathological organisms are selected from the group consisting of aphids, thrips, spider mites, arachnids, nematodes, and leafhoppers. Dependent Claim 30 recites that the green plant is selected from the group consisting of a rose, a grape, a tomato, and a bell pepper. Dependent claims 31 and 32 recite that the composition further comprises a surfactant; and dependent claims 33 and 34 recite that the composition further comprises a salt of a polyprotic acid. Sotome teaches away from Claims 2, 26, and 29-34, and 37-39, as Sotome teaches that the use of a composition comprising an aromatic aldehyde without an anti-oxidant will not provide a plant with sustained resistance to pathological microorganisms. None of the other references would suggest to a person of skill in the art that the use of a composition comprising an aromatic aldehyde without an anti-oxidant would provide a plant with sustained resistance to pathological microorganisms. Accordingly, Applicant respectfully requests the withdrawal of the rejection of Claims 2, 26, and 29-34.

Furthermore, Applicant therefore respectfully submits that Claims 7, 8, 15, 22-25, and 36 are not obvious over the cited references for the following additional reasons. Dependent Claim 7 recites a method for providing a plant with sustained resistance to pathological microorganisms comprising a composition comprising an aromatic aldehyde without an anti-oxidant, wherein the

aromatic aldehyde is microencapsulated in a polymer. Claims 8, 15, 22-25 and 36 depend from Claim 7. Applicants submit that neither Sotome nor Tsuei, alone or in combination, teach a method for providing a plant with sustained resistance to pathological microorganisms through the use of a microencapsulated composition comprising an aromatic aldehyde without an antioxidant. First, the disclosed inventions of Tsuei and Sotome are not in the same field of endeavor, as Sotome relates to the protection of plants, while Tsuei relates to the process of encapsulating ingredients. Therefore, a person of ordinary skill in the art would not be expected to combine the teachings of Tsuei and Sotome to arrive at Applicant's claimed invention.

Second, the prior art would not provide one of ordinary skill with a reasonable expectation of success. As discussed above, a person of skill in the art reviewing Sotome would be led to believe that the addition of an antioxidant to a composition comprising cinnamic aldehyde was essential for obtaining sustained anti-microbial effect on a plant. Furthermore, Tsuei does not identify any aromatic aldehyde compounds that would be useful for providing a plant with sustained resistance to pathological microorganisms if microencapsulated. Therefore, a person of skill in the art would not reasonably be expected to try to encapsulate cinnamic aldehyde, out of all possible anti-microbial compounds, for use in providing a plant with sustained resistance to pathological microorganisms.

Claims 31 and 32 depend from Claim 26 and recite that the composition further comprises a surfactant. As Claim 26 is not obvious over the combination of Sotome and Tsuei, the addition of Frear would not render claims 31 or 32 obvious over the Examiner's cited prior art.

Claims 35 and 37 recites the method of protecting crops against attack from insects and microorganisms comprising a composition wherein the aromatic compound is selected from the

group consisting of alpha-hexyl cinnamic aldehyde,  $\alpha$ -amyl cinnamic aldehyde, and coniferyl aldehyde. Since Sotome only discloses the use of cinnamic aldehyde for protecting crops against attack from insects and microorganisms, Claims 35 and 37 are not obvious over Sotome. Furthermore, none of the other references would suggest to a person of skill in the art that the use of a composition comprising one of the recited aromatic aldehyde without an anti-oxidant would provide a plant with sustained resistance to pathological microorganisms.

2. Sotome (US 4,978,686), Tsuei (US 5,589,194), Yamashita (US 5,696,094), Frear, Winston (US 5,415,877)

Claims 33-34 are rejected under 35 USC §103(a) as being unpatentable over Sotome (US 4,978,686) in view of Tsuei (US 5,589,194), Yamashita (US 5,696,094) and Frear, and in further view of Winston (US 5,415,877). Applicant respectfully traverses.

Claims 33 and 34 are directed to methods for providing a susceptible plant with sustained resistance to pathological microorganisms comprising compositions containing cinnamic aldehyde, alpha-hexyl cinnamic aldehyde,  $\alpha$ -amyl cinnamic aldehyde, and/or coniferyl aldehyde without an additional antioxidant. As discussed above, Sotome teaches that compositions comprising cinnamic aldehyde require the addition of an anti-oxidant to protect crops against attack from insects and microorganisms for a sustained period of time. As Claims 33 and 34 do not claim compositions wherein said aromatic aldehyde is microencapsulated in a polymer, Tsuei is not a relevant reference. While Winston teaches that bicarbonates are useful as fungicides, a person of skill in the art would not be led to use bicarbonate in a composition comprising an aromatic aldehyde without an additional antioxidant to control pathological organisms on a plant because Sotome teaches that such a composition would not be effective over a period of time. Therefore, Claims 33 and 34 are not obvious over the teachings of the combined references.

### CONCLUSION

Applicants respectfully submit that the claims are now in condition for allowance and an early notification of such is solicited. If, upon review, the Examiner feels there are additional outstanding issues, the Examiner is invited to call the undersigned attorney at (415) 781-1989.

Respectfully submitted,

DORSEY & WHITNEY LLP

Dated: 3/1/03

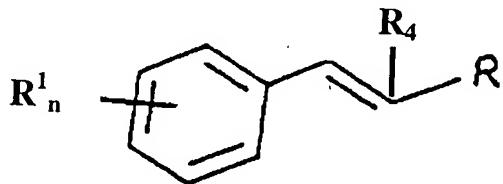
By:   
David J. Brezner, Reg. No. 24,774  
Filed under 37 CFR §1.34(a)

Four Embarcadero Center, Suite 3400  
San Francisco, California 94111-4187  
Telephone: (415) 781-1989  
Facsimile: (415) 398-3249  
1105682

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

2. (Twice Amended) A method for providing a susceptible plant with sustained resistance to pathological microorganisms, said method comprising:

administering to said plant a nonphytotoxic composition comprising at least one aromatic compound having the formula



wherein R represents -CHO, -CH<sub>2</sub>OH, -COOH, or -COOR<sub>5</sub>; n is an integer from 0 to 3; each R<sup>1</sup> represents -OH, or an organic substituent containing from 1 to 10 carbon atoms and from 0 to 5 heteroatoms, wherein the total number of carbon and heteroatoms in all R<sup>1</sup> substituents of said compound is no more than 15; and R<sub>4</sub> represents -H or an organic constituent containing from 1 to 10 carbon atoms; and R<sub>5</sub> represent an organic substituent containing from 1 to 10 carbon atoms and from 0 to 5 heteroatoms; and wherein said composition is free of antioxidants other than said at least one aromatic compound.

15. (Twice Amended) The method according to Claim [2] 7, wherein said composition comprises a surfactant.

26. (Amended) A method for providing a susceptible plant with sustained resistance to pathological microorganisms, said method comprising:

administering to said plant a nonphytotoxic composition comprising one or more aromatic aldehydes selected from the group consisting of cinnamic aldehyde, alpha-hexyl cinnamic aldehyde,  $\alpha$ -amyl cinnamic aldehyde, and coniferyl aldehyde, wherein said composition is free of antioxidants other than said [at] one or more aldehyde.

35. (New) The method according to Claim 6, wherein said aromatic compound is selected from the group consisting of alpha-hexyl cinnamic aldehyde,  $\alpha$ -amyl cinnamic aldehyde, and coniferyl aldehyde.

36. (New) The method according to claim 7, wherein said pathological microorganisms are selected from the group consisting of fungi.

37. (New) The method according to Claim 26, wherein said aromatic aldehyde is selected from the group consisting of alpha-hexyl cinnamic aldehyde,  $\alpha$ -amyl cinnamic aldehyde, and coniferyl aldehyde.

38. (New) The method according to Claim 26, wherein said pathological organisms are selected from the group consisting of soil borne pathogens.

39. (New) The method according to Claim 26, wherein said pathological organisms are selected from the group consisting of fungi.